

Application No. 10/516,387
Paper Dated: July 19, 2010
In Reply to USPTO Correspondence of January 19, 2010
Attorney Docket No. 4623-045790

REMARKS

This application has been amended. In particular, the time period of leach liquor application in claims 1, 21 and 22 has been amended to read “less than 4 hours in each 24 hour period of carrying out the method” in order to further clarify the claimed time period. Claims 23-25 have been added by this amendment. Claim 23 finds support in original claims 1 and 3 as well as in lines 28-36 of page 3 of the specification as filed. Claims 24 finds support in original claim 1 as well as on page 8 of the specification as filed. Claim 25 finds support in original claims 1 and 16, as well as in lines 25-36 of page 5 and on page 8 of the specification as filed. Thus, no new matter has been added. Claims 1-7, 10-14 and 21-25 are currently pending, of which claims 1, 21 and 22-25 are in independent form. For the following reasons, Applicants submit that the pending claims are patentable over the cited art of record and the application is in condition for allowance.

Claims 1-7, 10-14, 21 and 22 stand rejected under 35 U.S.C. §103(a) for obviousness over U.S. Patent No. 4,960,584 to Brown. In view of the foregoing amendments and following remarks, this rejection is respectfully traversed.

Brown is directed to a system for supplying a heap leaching solution to a bed of crushed, metal-laden ore. The heap leaching solution is supplied via an array of sprinklers or drip systems that supply the solution across the whole top surface of a heap continuously. The system for distributing the heap leaching solution includes a mainline pipe (14), a plurality of header pipes (15), and a series of tubes (16) which have a plurality of spaced emitters (17) for directly emitting the solution into the ore bed. The location of the emitters is staggered between adjacent tubes to provide solution across the whole top of the bed. The tubes (16) and emitters (17) remain stationary, and Brown fails to mention or suggest any movement of the system components. Indeed, the relatively complex system of tubes and emitters would be difficult, if not impossible, to move. Instead, Brown provides for coverage of the whole bed by using emitters disposed on parallel tubes where the emitters on one tube are staggered with respect to the emitters on an adjacent tube.

The claimed invention defines a method that includes supplying leach liquor onto a top surface of a section of heap where the leach liquor is supplied for a relatively short time

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period of less than 4 hours in each 24-hour period during which the method is carried out. There is no disclosure and no suggestion in Brown that the leach liquor is supplied for periods of time of less than 4 hours in each 24 hour period during the course of carrying out the leaching operation. Instead, Brown simply discloses continuous supply of leach liquor to the whole of a top surface of a heap during the whole of a leach operation, which may run from 4 hours to 60 days.

In lines 7-9 of column 5, Brown states: "Such contact time [of the leach solution] may be of 4 hours to 60 days with many of the applications requiring seven to forty-five days." At most, this statement suggests that the leach operations of Brown may run from "4 hours to 60 days." The Office Action interprets this passage of Brown as suggesting a method in which leach liquor is supplied in a manner similar to that recited in the claims. In particular, page 3 of the most recent Office Action states that "the total contact time [in Brown] would be less than 4 hours if the number of 24 hour periods is one (1), which is very close the contact time of 4 hours as disclosed by Brown ('584)." However, Applicants respectfully submit that this reasoning overlooks the fact that the claims refer to "each" 24-hour period, which implies that there are more than one 24 hour period. In any event, the leach operation of the claims must run for at least 24 hours (to qualify as a 24-hour period), and not merely 4 hours, as would be the case in Brown. In an effort to clarify the difference between the presently claimed invention (where contact time is 4 hours in each 24 hour period during which the method is carried out) and Brown (where there is a single, continuous supply of solution throughout the process which may be anywhere from 4 hours to 60 days), Applicants have amended the claims to clarify that for each 24 hour period in which the method is carried out, the leach liquor is supplied for the relatively short time period of less than 4 hours.

For these reasons, Applicants submit that Brown fails to teach or suggest a method for leaching metal in which a leach liquor is supplied for a relatively short time period of less than 4 hours in each 24 hour period of carrying out the method.

Claims 3 and 21 define a method in which leach liquor is supplied as a downwardly flowing curtain wherein the curtain moves along the heap continuously or in a series of steps. Brown neither discloses nor suggests such a moving curtain.

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The paragraph bridging pages 3 and 4 of the Office Action asserts that Brown discloses moving a curtain along the entire length of a heap. This paragraph then provides that it would have been obvious to one of ordinary skill, upon reading Brown, that such a curtain could be moved along the entire length of the heap. This is not a fair reading of Brown, and appears to be contrary to the actual system taught in Brown. Brown discloses continuously supplying leach liquor to the whole of a top surface of a heap. Even if this could be said to be a “curtain,” there is no suggestion in Brown of moving a curtain that covers a section of a top surface of a heap along the length of the heap continuously or in a series of steps to ultimately supply leach liquor to the whole surface. As mentioned above, the parallel tubes and staggered emitters in Brown are said to allow for complete saturation of the ore bed. Accordingly, Brown need not provide a downwardly flowing curtain that moves along the heap since adequate saturation occurs through the arrangement of the emitters. Furthermore, the complicated arrangement of the system in Brown, with a mainline pipe connected to header pipes which are subsequently connected to a series of parallel tubes, would make it unreasonable to move the tubes along the heap continuously or in a series of steps. Instead, the system of Brown is a fixed arrangement. Absent some supporting evidence, it is improper to assert Brown teaches or suggests a method in which a curtain of downwardly flowing leach liquor is moved along the heap bed continuously or in a series of steps.

Therefore, claims 1-7, 10-14, 21 and 22 are patentable over Brown, and the rejection of these claims under 35 U.S.C. §103(a) for obviousness should be reconsidered and withdrawn.

New Claims 23-25 are Patentable Over Brown

Claims 23-25 have been added by this amendment. Each of these claims requires supplying leach liquor onto a top surface for a time period of less than 4 hours in each 24 hour period during the total time period of carrying out the method and is thus distinguishable over Brown as discussed above on pages 7 and 8.

Claim 23 further includes supplying leach liquor as a downwardly flowing curtain of leach liquor onto a narrow band extending across a top surface of the heap, with the narrow

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band being less than 1 m wide, and moving the curtain along the length of the heap continuously or in a series of steps. Brown does not teach or suggest a method in which a narrow band of leach liquor is moved at all.

Claim 24 further requires that, after supplying the leach liquor to the first section of heap, step (a) is repeated at a second portion of the heap. This additional step of repeating the leach liquor supply at a second section of heap is not disclosed or suggested in Brown. Instead, Brown teaches application of the leach solution across the entire bed in a single application and at a uniform rate. As discussed above, the system of Brown includes a series of tubes and staggered emitters which aid in the “substantially uniform saturation of ore bed 11 with the solution.” (*See* Brown, col. 4, lines 60-64.)

Claim 25 includes providing leach liquor through spaced-apart spray outlets that are on a track-mounted header pipe which extends across the heap and moving the header pipe along the length of the heap to saturate different sections of the heap. As discussed above on page 9, Brown’s system is stationary, and thus Brown fails to teach or suggest moving a header pipe along the length of the heap to saturate different sections.

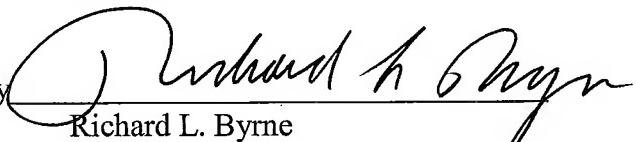
Thus, claims 23-25 are also patentable over Brown.

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CONCLUSION

For the foregoing reasons, Applicants submit that the pending claims are patentable over the cited documents of record and are in condition for allowance. Accordingly, reconsideration of the outstanding rejection and allowance of pending claims 1-7, 10-14 and 21-25 are respectfully requested.

Respectfully submitted,
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